Amendments to the Specification:

The paragraph starting at page 1, line 9, is amended and now reads as follows:

-- United States ~~patent application serial no. 10/169,293 (PCT/DE 00/03181, filed September 13, 2000)~~ Patent 6,715,287 is incorporated herein by reference and discloses a method and an arrangement for controlling an internal combustion engine having an air system. Here, a physical quantity is determined by means of at least one physical model. This physical quantity characterizes the air system starting from at least one actuating variable and/or at least one measurement quantity which characterizes the state of the ambient air. The physical quantity is not an input quantity of the physical model. --

The paragraph starting at page 6, line 14, is amended and now reads as follows:

-- According to FIG. 2, the measured rpm 205 is supplied to the physical model as the first input quantity. As the second input quantity, the air mass flow 210 is supplied by the engine control 25 with this air mass flow 210 being required for the adjustment of the pregiven air/fuel mixture ratio. The measured charge air temperature 215 is supplied from the charge air temperature sensor 65 to the physical model 5 as the third input quantity. The position 220, that is, the required degree of opening of the exhaust-gas recirculation valve 20, which is

required for the adjustment of the pregiven exhaust-gas recirculation rate, is supplied by the engine control 25 as the fourth input quantity to the physical model 5. The measured fresh air mass flow 225, which is measured by the air mass sensor 55, is supplied via a corrective member 40 as a fifth input quantity to the physical model 5. The physical model 5 computes the charge pressure in the air supply 50 between the air mass sensor 55 and the diesel engine 70 in the manner disclosed in United States ~~patent application serial no. 10/169,293~~ Patent 6,715,287 incorporated herein by reference. The charge pressure is supplied to a subtraction member 30 and is there subtracted from the charge pressure actual value 230, which is measured by the charge pressure sensor 60. The difference which forms at the output of the subtraction member 30 is supplied to a controller 10. The controller 10 forms a corrective value for correcting the fresh air mass flow in dependence upon the supplied difference. According to a first embodiment, this corrective value is supplied directly to the corrective member 40 (not shown). The corrective member 40 can, for example, be an addition member wherein the fresh air mass flow, which is measured by the air mass sensor 55, is added to the corrective value and the sum is supplied to the physical model 5. In this way, the measurement signal of the air mass sensor 55 can be monitored. With the correction of the measurement signal of the air mass sensor 55 (that is, of the measured value for the fresh air mass flow), effects of the air mass signal error on the emission of toxic substances can be prevented. The controller 10 and the subtraction member 30 conjointly define a control

unit. --

The paragraph starting at page 9, line 18, is amended and now reads as follows:

-- Alternatively, or in addition to the described monitored input quantities, a quantity can also be monitored which is determined within the physical model 5 and defines a model internal quantity. This can, for example, be the exhaust-gas temperature in the exhaust-gas system 85. Additionally, this quantity can be determined by means of a temperature sensor. The model internal quantity can, for example, also be the exhaust-gas pressure in the exhaust-gas system 85 or it can otherwise be a model internal quantity known from United States ~~patent application serial no. 10/169,293~~ Patent 6,715,287, incorporated herein by reference. This model internal quantity can be monitored and also corrected by means of the apparatus 25 or the method of the invention in the manner described in the same way as described for the monitored input quantity. In this case, it is not an input quantity of the physical model 5 which is corrected by the corrective member 40, rather, the corresponding model internal quantity is corrected. --

The paragraph starting at page 10, line 5, is amended and now reads as follows:

-- In FIG. 3, a flowchart is shown for an exemplary sequence of the method of the invention. At the start of the program, the

physical model 5 computes the charge pressure (Block 105) in the air supply 50 from the above-mentioned input quantities in accordance with the manner described in United States ~~patent application serial no. 10/169,293~~ Patent 6,715,287, incorporated herein by reference. Thereafter, the program branches to program point 110. --

The paragraph starting at page 12, line 14, is amended and now reads as follows:

-- With the physical model 5 of United States ~~patent application serial no. 10/169,293~~ Patent 6,715,287, incorporated herein by reference, time constants of the air system can be simulated. These time constants are, for example, caused by the movement of one or several actuators in the air system, for example, of the exhaust-gas recirculation valve 20. In this way, it is possible to determine the charge pressure in steady-state operating conditions as well as in dynamic operating conditions of the internal combustion assembly 1 for any desired position of the actuator. As an actuator, the exhaust-gas recirculation valve 20 is shown in FIG. 1 by way of example. In addition, or alternatively, a throttle flap or a swirl flap can be provided in the air supply 50 in flow direction in advance of the entry 200 of the exhaust-gas recirculation channel 100 into the air supply 50 in order to adjust the pregiven exhaust-gas recirculation rate. Additionally, or alternatively, an actuator for the exhaust-gas recirculation cooling bypass can also be provided. The throttle flap, the exhaust-gas recirculation valve

or the exhaust-gas recirculation cooling bypass can be driven by the engine control 25 to adjust the pregiven exhaust-gas recirculation rate. --